Commodity Highlight: Squash

The United States produces 4 percent of the world's supply of squash and pumpkins (a combined category)—the fifth largest crop behind China (30 percent of world output), India (19 percent), the Ukraine (5 percent), and Egypt (4 percent). The United States harvests less than 3 percent of the 3.6 million acres devoted to pumpkins and squash in the world.

Like cucumbers, pumpkins, and melons, squash is part of the gourd (*cucurbitaceae*) family. Unlike most other members of this family, squash (and pumpkins) are native to the Americas. Also popular in home gardens, squash is a warm season crop not tolerant of temperatures near freezing. Squash is generally comprised of two main types—summer and winter—which offer widely different characteristics, with flesh colors ranging from white to orange. Despite the names, both types grow and are available year-round in the United States. Years ago, prior to the advent of extensive fresh vegetable imports, winter squash was one of several long-keeping vegetables (including potatoes, sweet potatoes, and turnips) widely grown to store in root cellars for use over the winter.

Summer squash (*cucurbita pepo*), which is harvested and consumed in its immature state, features soft, thin, edible rinds (shells) and tender flesh with soft edible seeds. The three main kinds of summer squash produced in the United States are zucchini (sometimes called Italian squash), yellow, and scallop-types, with zucchini likely being the most popular. Yellow squash is composed of straightneck and crookneck types and, like zucchini, can also be found year-round in supermarkets. Scallop types, also known as pattypan, bush, cymling, and scallopini are so named because of their unique round, shell (or pie crust)-like appearance.

Chayote (*sechium edule*) is another member of the gourd family which has gained in popularity over the past decade, due largely to use by immigrants. Also a North

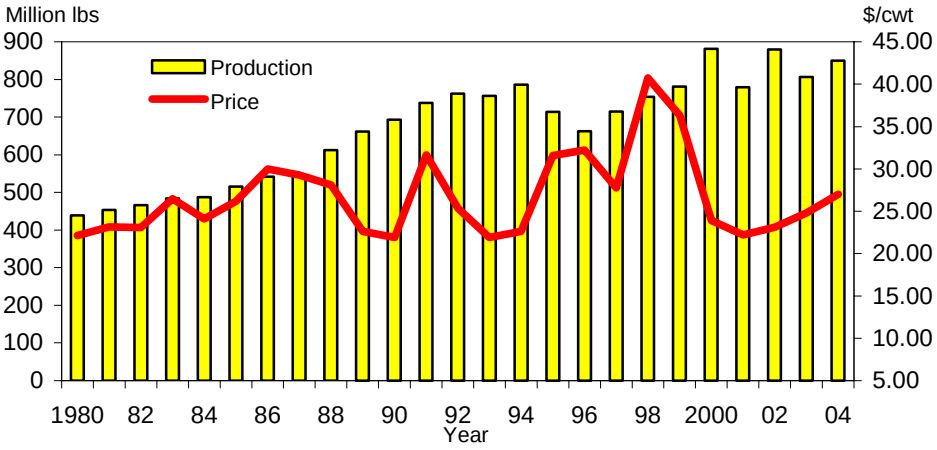
Table 16--U.S. squash: Farm numbers and area harvested in leading States

State	Number of farms in 2002	2002	1997	1992
	Number		*Acres*	
U.S.	11,035	71,236	71,290	69,029
California	830	10,302	9,805	8,374
Florida	406	9,692	11,446	13,292
Georgia	238	9,013	7,848	8,339
Michigan	802	7,341	6,166	4,277
New York	1,098	4,226	3,180	2,586
New Jersey	588	3,760	4,767	3,951
North Carolina	351	2,864	1,881	2,578
Oregon	264	2,313	3,613	2,286
Massachusetts	439	1,834	2,242	2,447
Texas	355	1,807	2,037	2,833
Others	5,664	18,084	18,305	18,066
			Percent	
Share of U.S.:				
Top state	10	14	16	19
Top three states	25	41	41	43
Top five states	34	57	56	55

Source: Census of Agriculture, NASS, USDA (1997 & 2002), U.S. Dept. of Commerce (1992)

Figure 8

U.S. squash: Production & shipping-point price



Source: Economic Research Service, USDA except for 2000-03 from the National Agricultural Statistics Service, USDA.

American native, chayote is increasingly being used like another kind of summer squash. The United States imported 55 million pounds of chayote (largely from Costa Rica) in 2003, up 84 percent since 1993.

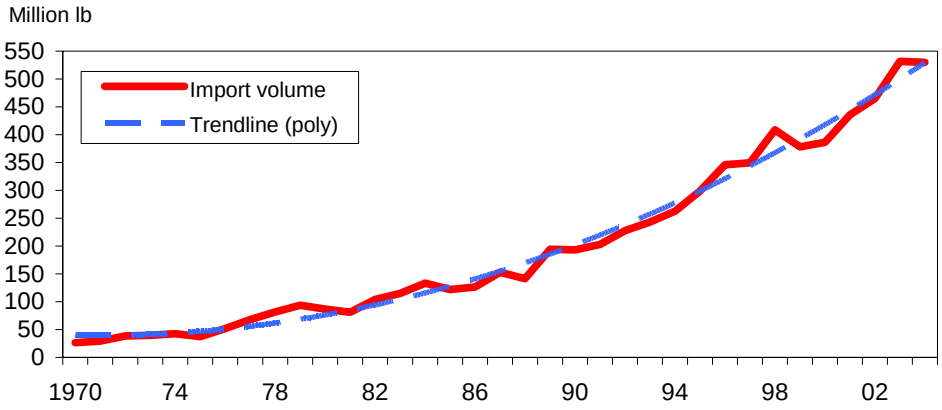
Winter squash features hard, relatively thick rinds, dense yellow or orange flesh, and a hollow seed cavity with hard seeds. The thick, hard skin allows the vegetable to be stored in a cool, dry place for several months and may also pose a preparation challenge to some consumers. There are a variety of winter squash types (pumpkins are also part of this genus) ranging widely in size, color, texture, and appearance. The most popular kinds of winter squash grown in the United States include butternut, acorn (sometimes called table queen), spaghetti, buttercup, and hubbard. Like chayote, interest in calabaza (*cucurbita moschata*) squash appears to be on the rise in concert with Hispanic and Filipino immigration trends.

The number of farms producing squash and the acreage harvested have each increased over the past 30 years. According to the 2002 Census of Agriculture, 11,035 farms reported the production of squash—up 16 percent from 1997, 23 percent above 1992, and 42 percent higher than in 1987. During this same period, the number of farms producing vegetables has declined, indicating that the remaining growers have likely diversified to offer more complete product lines and to spread crop risk. Squash area harvested has increased from 38,527 acres in the 1974 Census to 71,236 acres in 2002.

The Census indicated that in 2002, 12 percent of the area devoted to squash was used for processing. Michigan (25 percent of processing area), Oregon (19 percent), and California (15 percent) were the top three States in the production of squash for processing. There are no current data for canned pack although canned pack of pumpkin and squash in the 1970s and 80s was around 300 million pounds annually. The reported pack of frozen squash peaked in 1986 at 76 million pounds annually and has steadily declined since then to 37 million pounds in 2003. Thus, most of the increase in squash supply in the past decade has likely been for the fresh market.

Figure 9

U.S. squash import volume is trending higher



Source: Bureau of the Census, USDC.

According to the 2002 Census, about 3 percent of all farms producing squash accounted for 59 percent of the area harvested. These 337 farms harvested at least 50 acres of squash. On the other end of the spectrum, 84 percent of the farms reporting squash production harvested less than 5 acres of squash and accounted for 12 percent of the total area devoted to squash. The data suggest that most of the additional farms since 1997 produce less than 5 acres of squash.

USDA's National Agricultural Statistics Service began national estimates for the first time for squash in 2000. According to these estimates, during 2001-03 period, the top five States produced 75 percent of the Nation's squash crop. During this time, the leading squash-producing States were California (18 percent of U.S. output), Florida (17 percent), Michigan (16 percent), Georgia (15 percent), and New York (9 percent). Zucchini and yellow squash are the dominant types produced in Florida and Georgia.

The farm value of the U.S. squash crop during 2001-03 was estimated to be $192 million, similar to the values of fresh-market cauliflower and cucumbers. Florida (24 percent), Georgia (17 percent), and California (15 percent) were the top three States in terms of crop value during 2001-03. Florida's receipts stem from both large production and high average prices—Texas and Florida receive the highest average prices for squash (partly due to production during fall and winter when competition is reduced).

The United States is the world's top squash import market, importing an average of $170 million (477 million pounds) annually during 2001-03. Mexico, Costa Rica, and Canada are the top three foreign suppliers. About three-fourths of all squash imports enter during November to April, with the peak coming in January when 15 percent of all volume enters. The average unit value for imported squash was $0.36 per pound during 2001-03—up 20 percent from 1991-93.

Imports have gained an expanding foothold in the U.S. squash market over the past few decades. During 2001-03, 37 percent of domestic squash demand was satisfied by imported product. This was up from 23 percent during 1991-93 and 18 percent during 1981-83. During 2001-03, 87 percent of all squash import volume came from Mexico, with these imports valued at $160 million. U.S. export statistics are not available, although Canada imports more than 25 million pounds of marrows, squash, and pumpkins (an aggregate category) annually from the United States.

In the United States, squash is produced primarily for the fresh market and enjoys a wide variety of uses. The primary use of squash is as a main vegetable side dish at meals. Squash can be prepared any number of ways by baking, boiling, frying, sautéing, microwaving, or steaming. Squash can also be used in recipes for stews, soups, salads (fresh-cut cubes), vegetable dips and trays, purees, and as an ingredient in pies and cakes. Baby (small immature) squash can also be found in some specialty produce stores. A nutritious vegetable, squash provides a wide range of vitamins and nutrients, with the nutrient levels depending on the type of squash consumed.

Given the gains experienced in both domestic production and import volumes, it is no surprise that domestic consumption of squash has been trending higher. According to ERS estimates, domestic disappearance of squash totaled 1.3 billion pounds in 2003, down slightly from the record high reached a year earlier. During 2001-03, per capita use (consumption) of squash averaged 4.5 pounds—19 percent greater than during 1991-93 and 83 percent greater than 1981-83.

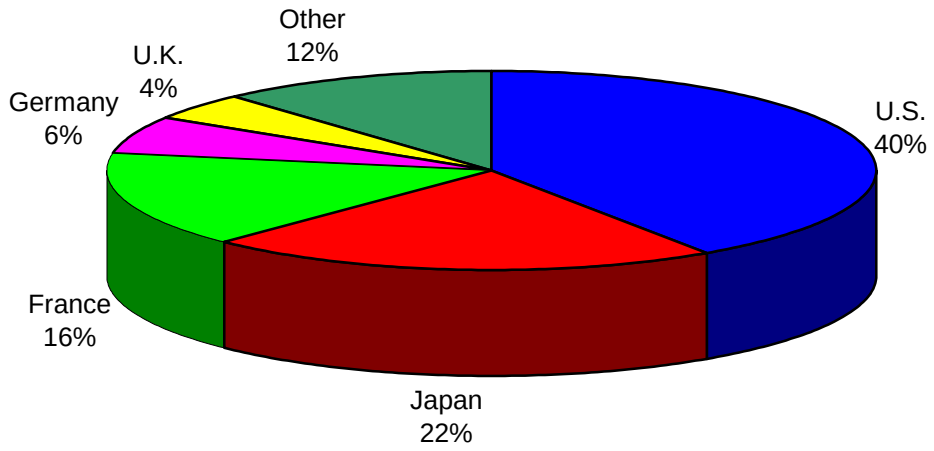
Table 17--U.S. squash: Supply, disappearance, and price

Year	Supply			Utilization			Season-ave. price	
	Production 1/	Imports 2/ 3/	Total	Exports 3/	Domestic	Per capita use	Current dollars 1/ 4/	Constant dollars 5/
	-- Million pounds --					Pounds	-- $/cwt --	
1970	246.3	26.2	272.5	--	272.5	1.33	12.10	43.93
1980	438.7	86.9	525.6	--	525.6	2.31	22.14	40.97
1990	693.2	193.1	886.3	4.7	881.6	3.52	21.90	26.85
2000	881.2	386.2	1,267.4	8.1	1,259.3	4.46	23.90	23.90
2001	779.1	435.4	1,214.5	8.6	1,205.9	4.23	22.20	21.68
2002	879.2	465.0	1,344.2	8.3	1,335.9	4.64	23.10	22.19
2003	806.1	531.4	1,337.5	8.4	1,329.1	4.57	24.80	23.40
2004 f	885.0	530.0	1,415.0	9.0	1,406.0	4.78	--	--

-- = Not available. f = ERS forecast. 1/ Source: ERS estimates except 2000-03 by the National Agricultural Statistics Service, USDA. 2/ Includes chayote imports. 3/ Source is Bureau of the Census, USDC. 3/ Estimated by ERS as 5 percent of misc. export category HS 0709905000. 4/ Price largely reflects Florida's squash crop as reported by Florida Agric Statistics. 5/ Constant-dollar prices calculated using GDP deflator, 2000=100.

Figure 10

World squash & pumpkins: Average import share, 2001-03



Source: FAOStat, Food and Agriculture Organization, United Nations.